

## PROTON-INDUCED BACKGROUND IN CdZnTe ARRAYS

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Cadmium Zinc Telluride (CdZnTe) detector arrays show great promise as the prime sensors for both focusing and non-focusing hard x-ray imaging spectrometers. However, their sensitivity will be determined in part by the intensity of the induced background arising from cosmic rays. In December 1995 we investigated this background by irradiating a  $10 \times 10 \times 3 \text{ mm}^3$  CdZnTe crystal with 199 MeV protons to a fluence of  $5 \times 10^{10}$  protons/cm<sup>2</sup> at the Indiana University Cyclotron Facility (IUCF). Beginning less than 3 minutes after the irradiation, and continuing for 15 months, we measured the activity of the CdZnTe with a Ge gamma-ray spectrometer. We then developed a model to calculate the spallation products and their decay spectrum which was adjusted to agree with the measured gamma-ray line intensities. This model can now be used to estimate the background count rate spectrum of CdZnTe arrays in space-based experiments.